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Dated: November 19, 2004 Signature: Brent E. Matthias

(Brent E. Matthias)

Attorney Docket No.: 29757/P-577
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Craig A. Paulsen et al.

Application No.: 09/964,962

Filed: September 27, 2001

Art Unit: 3713

For: GAMING MACHINE REEL HAVING A
FLEXIBLE DYNAMIC DISPLAY

Examiner: C. M. Marks

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under § 41.37(a), this brief is filed within two months of the Notice of Appeal filed in this case on September 20, 2004, and is in furtherance of said Notice of Appeal. The fees required under § 41.20(b)(2) are addressed in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

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Pursuant to the Notice of Appeal filed September 20, 2004, in connection with the above-identified patent application, Applicants respectfully submit this Appeal Brief in accordance with 37 C.F.R. §41.37. Enclosed is a check in the amount of \$340.00, pursuant to 37 C.F.R. §41.20(b)(2). The Commissioner is directed to charge or debit Deposit Account No. 13-2855 for any additional fees or refunds.

I. REAL PARTY IN INTEREST

The real party in interest in the application on appeal is IGT, the assignee of rights in the present application. A first assignment assigning rights in the present application from the inventors to International Game Technology was recorded in the United States Patent and Trademark Office at Reel 012478, Frame 0623. A second assignment assigning rights in the present application from International Game Technology to IGT was recorded in the United States Patent and Trademark Office at Reel 012931, Frame 0612.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-40 have been presented during the course of this proceeding. Claims 1-26 have been canceled, leaving claims 27-40 pending and at issue. The claims are reproduced in Appendix A set forth below.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the final rejection dated April 26, 2004. All previous amendments have been entered and are reflected in the claims reproduced in Appendix A.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Although specification citations are inserted below in accordance with C.F.R. §41.37(c)(v), these reference numerals and citations are merely examples of where support may be found in the specification for the terms used in this section of the brief. There is no intention to suggest that the terms of the claims are limited to the examples in the

specification. Although as demonstrated by the reference numerals and citations below, the claims are fully supported by the specification as required by law, it is improper under the law to read limitations from the specification into the claims. Pointing out specification support for the claim terminology to comply with rule 41.37(c)(v) does not limit the scope of the claims to those examples from which they find support. Nor does this exercise provide a mechanism for circumventing the law precluding reading limitations into the claims from the specification. In short, reference numerals and specification citations are not to be construed as claim limitations or in any way used to limit the scope of the claims.

The claimed subject matter is directed to a flexible display panel for use on the reels of a slot machine. Conventional slot machine reels have multiple indicia printed on their peripheries depicting specific symbols relevant to game play. During play, the reels are spun and a random number generator is used to select a random number for each reel. The random numbers correspond to indicia or symbols on the reel peripheries, and the reels are controlled so that each reel stops in a position to display the indicium associated with the selected random number at a payline. Payouts are made when a winning combination of random numbers, which are presented to the player as a winning combination of symbols on the reels, are generated.

The maximum feasible payout associated with conventional reels is limited by the number of unique symbols that can be displayed by the reel. Each reel of a game may have, for example, 22 stops corresponding to 22 different symbols that can be displayed on the payline. Consequently, for a traditional slot machine having three reels, where each reel has 22 stops, the lowest probability that can be obtained is $1:22^3$ or 1:10,648. Thus, for the slot machine to be commercially viable, the maximum jackpot payable by such a machine is limited to the amount that could be paid one in every 10,648 plays.

Player interest and appeal, however, are increased by offering higher payouts and greater game variation. The number of combinations and, hence, the amount of payout, may be increased by adding reels or the number of symbols carried by each reel. It has been observed, however, that slot machine players find machines having more than three reels less appealing. In addition, the number of symbols on a reel affects the size of the reel, and therefore the physical space limitations of a slot machine cabinet limit the ability to add more symbols.

Some known alternatives for lowering the probability (and thereby increasing the largest available payout) are still limited by the number of unique symbols that can be displayed on the reel. A “virtual reel” is described in U.S. Patent No. 4,448,419 to Telnaes which uses a software program that maps a number of virtual symbols to the physical symbols on the reel. Accordingly, multiple virtual symbols can be assigned to each physical symbol, thereby effectively raising the lowest probability that can be obtained. Another alternative uses a reel with luminescent display elements, as described in U.S. Patent No. 6,027,115 to Griswold et al. The reels described in this patent have “symbol regions” containing electroluminescent elements. Multiple electroluminescent elements may be arranged in each symbol region to allow a given symbol to be displayed in multiple formats. Thus, each possible symbol may appear to a player to be a different physical symbol, despite the fact that it exists within the same physical symbol region. With either alternative, the slot machine game play is limited by the number of unique symbols that can be displayed by the physical reel. Still further, if the owner of the slot machine using either technique wishes to change the gaming symbols, the slot machine reels must be physically replaced.

The apparatus specified in claims 27-40 addresses the problems of the prior devices by providing a reel with a display that may show a particular indicium regardless of the stop position of the reel. As specified in the claims, a flexible display is mounted on the reel and a controller is operatively coupled to the flexible display, the controller being programmed to cause an indicium to be displayed on the flexible display.

In the disclosed embodiment, and with reference to FIGS. 2 and 3, a slot machine reel 40 includes a flexible display panel 42 mounted to an outer circumference 44 of the reel 40. The flexible display panel 42 may be a LCD panel or a LED display panel capable of being shaped to mount to the outer circumference of the reel 40. The flexible display panel may be capable of displaying an infinite number of possible indicia relevant to game play, and can include one or more flexible portions allowing the flexible display panel to be bent, without sharp angles, and yet still maintain the display quality associated with well-known, non-flexible LCD or LED display panels.

VI. ISSUES

- A. Whether claims 27 and 33 have been properly rejected under 35 U.S.C. §103(a) as obvious over Griswold et al. (U.S. Patent No. 6,027,115) when there is no teaching or suggestion in Griswold of a flexible display capable of being elastically bent, as specified in the claims at issue.
- B. Whether claims 28, 31, 32, 34, 36-38, and 40 have been properly rejected under 35 U.S.C. §103(a) as obvious over Griswold et al. in view of Acres et al. (U.S. Patent No. 6,008,784) and further in view of the “Universal Display: FOLED Technology” document when there is no teaching in the references which would tend to teach or suggest the particular combination of features specified in the claims at issue.
- C. Whether claims 29, 30, 35, and 39 have been properly rejected under 35 U.S.C. §103(a) as obvious over Griswold et al. in view of Acres et al. in view of the “Universal Display: FOLED Technology” document and further in view of the “Business Week 2000: The Tube” article when there is no teaching in the references which would tend to teach or suggest the particular combination of features specified in the claims at issue.

VII. ARGUMENT

- A. **The Office action fails to state a *prima facie* case of obviousness against claims 27 and 33.**

Independent claims 27 and 33 were rejected under 35 U.S.C. §103(a) in the April 26, 2004 Office action. In articulating this rejection, the Examiner states that claims 27 and 33 “are rejected under 35 U.S.C. 103(a) as *being anticipated* by Griswold et al.” (emphasis added) From the context of the rejection as stated, however, Applicants assume that the Examiner intended to allege that the claims are *obvious* over the cited reference. If this assumption is incorrect, Applicants request the opportunity to present additional arguments addressing an anticipation rejection based on the cited Griswold et al. reference.

1. The Examiner misinterprets the term “elastically” as used in claims 27 and 33.

In attempting to bolster the relevance of the Griswold patent, the Examiner misinterprets claims 27 and 33 by ignoring the ordinary and customary meaning of the term “elastically” and refusing to adopt the definition of this term requested by the Applicants. Specifically, Applicants contend that the term “elastically” is to be interpreted as “capable of returning to an initial form or state after deformation,” as supported by the entry on page 718

of the *Academic Press Dictionary of Science and Technology*, © 1992 by Academic Press, Inc., attached hereto as Exhibit B. The Examiner, however, prefers to use a different definition, namely that “elastic” means “capable of adapting to change or a variety of circumstances.”

In addition to rendering the term essentially meaningless¹, the Examiner’s position is counter to several well-established principles regarding claim interpretation and Applicants’ freedom to define terms in the manner he or she chooses. It is axiomatic that an applicant is free to be his or her own lexicographer. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979, 34 USPQ2d 1321, 1330 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370, 38 USPQ2d 1461 (1996). In fact, the applicant may, “use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.” *Display Technologies, Inc. v. Paul Flum Ideas, Inc.*, 75 F.Supp.2d 283, 290 (S.D.N.Y. 1999), *aff’d*, 282 F.3d 1340 (Fed. Cir. 2002). Courts will typically look to the prosecution history to understand the intended meaning or scope of the terms used in a claim. *Vivid Technologies Inc. v. American Science and Engineering Inc.*, 200 F.3d 795, 804, 53 USPQ2d 1289, 1295 (Fed. Cir. 1999). “Because words often have multiple dictionary definitions, some having no relation to the claimed invention, the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor.” *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1203, 64 USPQ2d 1812 (Fed. Cir. 2002), *citing*, *Dow Chemical Co. v. Sumitomo Chemical Co.*, 257 F.3d 1364, 1272-73, 59 USPQ2d 1609, 1614 (Fed. Cir. 2001), *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478, 45 USPQ2d 1429, 1433 (Fed. Cir. 1998). Finally, as stated in §2111.01 of the M.P.E.P., when the words of a claim are not defined in the specification, they must be given their plain meaning. The undefined claim terms are not to be interpreted to include any possible definition, but rather “they must be read as they would be interpreted by those of ordinary skill in the art. (emphasis added) M.P.E.P. §2111.01, *citing* *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001). To determine the meaning to those of ordinary skill in the art may require the term’s “commonly accepted technical meaning” be used. *In re Barr*, 444 F.2d 588, 597, 170 USPQ 330, 339 (CCPA 1971).

In view of the foregoing authority, Applicants submit that the term “elastically” is properly defined as “capable of returning to an initial form or state after deformation.” This is consistent with its ordinary and customary meaning, and has been specifically adopted by the Applicants during prosecution of the application. This definition is supported by the excerpt from the technical dictionary noted above, and therefore is the “commonly accepted technical meaning” by which those of ordinary skill in the art would interpret the term. One of ordinary skill in the casino gaming apparatus art would have knowledge of at least basic mechanical and materials concepts, including elastic and plastic deformation of materials. As such, the skilled artisan would interpret the term “elastic” in its technical sense to describe a member that returns to its original shape after deflection, as opposed to “plastic” deformation. For all of these reasons, therefore, the term “elastically” should be interpreted to mean “capable of returning to an initial form or state after deformation,” as suggested by the Applicants.

2. When claims 27 and 33 are properly interpreted, Griswold et al. fail to disclose or suggest a flexible display capable of being elastically bent.

Each of claims 27 and 33 recites, *inter alia*, a flexible display mounted on a reel and “having a flexibility that allows the flexible display to be elastically bent” between substantially straight and curved configurations. The claims specify that the display in the curved configuration:

...is capable of contacting the outer circumferential region of the...reel at two points that define endpoints of an arc of said circumferential region having a central angle...

In claim 27, the central angle is stated as being about ninety degrees, while claim 33 specifies a central angle of at least ninety degrees. Both claims 27 and 33 further specify that the flexible display is adapted to display an indicium to a player. Thus, the plain language of claims 27 and 33 defines a display that is capable of generating an indicium and that is elastically flexible through an arc of about, or at least, ninety degrees. It is not seen that the cited prior art discloses or suggests such an element.

The Examiner incorrectly argues that the “reel strip” of Griswold et al. is responsive to the flexible display recited in the claims. While the reel strip of Griswold et al.

¹ Applicants are hard-pressed to identify a structure or device that is not “capable of adapting to change or a

may include one flexible layer (i.e., a “flexible substrate”), it includes several additional layers which Griswold et al. fail to describe or suggest as being flexible, as understood from the following excerpt of the Griswold patent:

Yet another aspect of the invention provides a reel strip for use as a display portion of a slot machine reel. Such reel strips may be characterized as including the following elements: (a) a flexible substrate; (b) a first electrode formed on the substrate; (c) one or more electroluminescent elements formed on at least a portion of the first electrode; and (d) a second electrode formed over at least the electroluminescent elements. At least one of the first and second electrodes should be transparent. Often a second substrate, including inked images of symbols, will be affixed to the second electrode. (Column 3, lines 39-49)

Furthermore, at column 7, lines 14-37 of the Griswold patent, and with reference to FIG. 4B, the reel strip 303 is described as having at least five separate layers: 1) a substrate which may be made from a flexible material, 2) a conductive layer comprising traces and lower capacitor plates 407, 3) an isolation layer 455 containing electroluminescent dielectric elements 453, 4) another conductive layer comprising traces 421 and capacitor plates 423, and 5) a printed cover strip 457 containing silk screened (i.e., static) images. Thus, while Griswold et al. state that the reel strip may include a flexible substrate, that does not mean that the fully assembled, composite reel strip structure is flexible, as argued by the Examiner (i.e., Griswold “includes a flexible display in the form of a reel strip”). Instead, Griswold et al. disclose only that one layer (i.e., the “flexible substrate”) of at least five layers is flexible. There is no express disclosure in Griswold that the reel strip, after all its constituent layers have been assembled together, is flexible.

In addition, the Griswold et al. reference fails to disclose or suggest that the reel strip is flexible such that it may be “elastically bent” as specified in claims 27 and 33. As noted above, the proper interpretation of the term “elastically” is “capable of returning to an initial form or state after deformation.” At best, the cited reference teaches a flexible layer used in a composite reel strip, and at no point do Griswold et al. disclose or suggest that this flexible layer or reel strip can be elastically bent.

3. The Examiner improperly marginalizes specific claim language as merely “design choice.”

Claims 27 and 33 specify that the flexible display in the curved configuration “is capable of contacting said outer circumferential region...at two points that define endpoints of an arc of said circumferential region having a central angle...” The central angle is said to be “about ninety degrees” in claim 27, while claim 33 states that the angle is “at least ninety degrees.” In articulating the rejection of claims 27 and 33, the Examiner improperly states that “the method in which [the claimed flexible display] is attached to the reel, in relation to ninety degrees, is a design choice...”

The limitation regarding the amount of arc about which the flexible display may be bent is not merely design choice, as suggested by the Examiner, but instead is provided to define the degree to which the display is flexible. It has been observed that, “Flexibility, like size and weight, is a relative concept.” *Stryker Corp. v. Intermedics Orthopedics, Inc.*, 891 F.Supp. 751, 769-770 (E.D.N.Y. 1995), *aff’d*, 96 F.3d 1409, 40 USPQ2d 1065 (Fed. Cir. 1996). Most physical objects have some degree of flexibility when exposed to a sufficient load, even objects that are considered “rigid,” such as steel plates or wooden desks. Accordingly, it is often proper to characterize the degree to which something is flexible.

In the present application, applicants have characterized the degree to which the display is flexible by including the limitation regarding the points at which the display can contact the reel circumferential region. Accordingly, this language is not simply “design choice” as the Examiner would have it, but rather a valid limitation as to the minimum flexibility of the display. Again, Griswold et al. fail to disclose or suggest a flexible display that may be elastically bent as specified in claims 27 and 33.

4. Conclusion with respect to claims 27 and 33.

For each of the reasons presented above, the Examiner has failed to establish a proper prima facie case of obviousness, and therefore the rejection asserted against claims 27 and 33 must be withdrawn.

B. The Office action fails to state a *prima facie* case of obviousness against claims 28, 31, 32, 34, 36-38, and 40.

Claims 28, 31, 32, 34, 36-38, and 40 were rejected under 35 U.S.C. §103(a) as obvious over Griswold et al. (U.S. Patent No. 6,027,115) in view of Acres et al. (U.S. Patent No. 6,008,784) and further in view of the “Universal Display: FOLED Technology” document (hereinafter “the FOLED document”). Claims 28, 31, and 32 depend from claim 27 and claims 34 and 36 depend from claim 33. Accordingly, these claims include the same elements noted above, including the “elastically bent” language. Similarly, independent claim 37, as well as claims 37, 38, and 40 dependent thereon, recites the same elements noted above. The following arguments distinguish these claims from the cited prior art based on language used in independent claims 27, 33, and 37.

1. The rejection of claims 28, 31, 32, 34, 36-38, and 40 fails to address each element in the claims.

As an initial observation, it is instructive to note that the obviousness rejection of these claims fails to assert that the proposed combination discloses or suggests a flexible display that may be elastically bent as specified in the claims. While the Examiner’s definition of the term “elastically” renders it virtually insignificant, Applicants have demonstrated above that those of skill in the art would understand this term differently. Accordingly, the rejection as stated fails to address each element of the claims, and therefore must be withdrawn.

2. The Examiner fails to identify proper motivation to combine the cited reference in the manner suggested in the Office action.

Notwithstanding this deficiency in the rejection as stated, Applicants submit that there is no motivation to combine the cited references as applied in the Office action. The mere fact that references can be modified is not sufficient to establish a prima facie case of obviousness. See §2143.01 of the M.P.E.P., which states, “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)” (emphasis original). In order to establish a prima facie case of obviousness, there must be actual evidence of a suggestion to modify a prior art reference or to combine two prior art references, and the suggestion to combine or modify the prior art

must be clear and particular. See, for example, *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999), where the Court of Appeals for the Federal Circuit stated:

The range of sources available, however, does not diminish the requirement for **actual evidence**. That is, the showing must be **clear and particular**. Broad conclusory statements regarding the teaching of multiple references, standing alone, are **not ‘evidence.’** (emphasis added, citations omitted).

The suggestion to combine references must be from the prior art, not Applicants’ disclosure. See Section 2143 of the M.P.E.P., which states: “The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).”

The Office action of April 26, 2004, offers the following as justification for the combination of references proposed therein:

Universal Display Corporation: FOLED Technology discloses that it is advantageous to substitute the use of normal LEDs with the FOLED technology. Motivations for doing so include the flexibility of FOLED, the ultra-lightweight, thin-form, as well as the cost-effective processing.

The usage of one flexible display over another would have been an obvious design choice to one of ordinary skill in the art based upon the desired functionality for the machine as defined by the designer. One of ordinary skill in the art would thus find it obvious to substitute the FOLED technology over that disclosed in Griswold in view of Acres. Therefore it would have been obvious to one of ordinary skill in the art to incorporate the dynamic FOLED format into the flexible display as disclosed by Acres et al. One of ordinary skill in the art would be motivated to make this design choice and substitution in order to provide a more efficient, flexible, and cost effective means to display information. One would be motivated to incorporate FOLED as cost would be reduced as FOLED is less breakable, more impact resistance [sic] as well as more cost-effective to produce.

Thus, the motivations set forth in the Office action for combining the applied documents cited can be summarized as the following: 1) flexibility; 2) weight reduction; and 3) cost-effectiveness.

These alleged motivations are simply general considerations that do not provide actual evidence of a suggestion to modify the gaming machines of Griswold and

Acres specifically with the display described in the FOLED document, as required for a proper combination. Instead, the purported motivations are discussed in the FOLED document with reference to mass-produced consumer products such as cell phones, portable computers, and televisions. Accordingly, it is not seen that the prior art fairly suggests the motivation for the proposed combination of prior art, absent the improper use of hindsight, and therefore the obviousness rejection as applied against claims 28, 31, 32, 34, 36-38, and 40 must be withdrawn.

Each of the purported motivations, as well as the "Response to Arguments" presented in the Office action of April 26, 2004, is addressed in greater detail below.

- a. "Flexibility" does not provide proper motivation for the proposed combination of references.

In articulating the obviousness rejection, the Examiner states that the Griswold and Acres references disclose flexible displays. Consequently, it is not seen how one of ordinary skill in the art would be motivated by the flexibility provided in the display described in the FOLED document to combine it with the already flexible (at least according to the Office action) displays of Griswold and Acres. The instant Office action responds to this position by stating:

Because Griswold and Acres already disclose flexible displays, one of ordinary skill in the art would merely find it a design choice to substitute other types of flexible displays as the type of actual display used would be a design choice to a system already embodied to support flexible displays. The motivation for this, as with any design choice, would be that of the designer who is inspired by the needs, wants, and desires for their system. For example, a skilled artisan would be more motivated to use a flexible substrate such as FOLED for the reasons and motivations detailed above. Design is a choice. It is known in the art that a designer has intrinsic motivation in designing their system and using one design over another is thus motivated by these needs and wants.

Once again, the Examiner resorts to vague notions of "design choice" and an artisan's "needs, wants, and desires" without identifying specific motivation to combine the display disclosed in the FOLED document with the gaming machines of Griswold et al. and Acres et al. At its core, the Examiner's argument is that the display of the FOLED document is capable of being combined with the other references and therefore constitutes "design choice." This position

runs directly counter to the requirements that the prior art suggest “the desirability of the combination” and provide “actual evidence” of a “clear and particular” suggestion to combine prior art references. *See, Mills*, 916 F.2d at 680; *Dembiczak*, 50 USPQ2d at 1617.

Furthermore, it is not alleged, nor is there actual evidence of, a suggestion or motivation to modify Griswold and Acres with a flexible display that may be elastically bent from a substantially straight configuration to a curved configuration. Consequently, any flexibility advantages taught in the FOLED document would not provide incentive to one of ordinary skill in the gaming machine art to combine it with Griswold and Acres.

- b. “Weight Reduction” does not provide proper motivation for the proposed combination of references.

Acres et al. and Griswold et al. disclose casino-type slot machines, which are typically large, stationary machines used in casinos. The FOLED document, however, states that the use of a flexible display will “reduce the weight of flat panel displays in cell phones, portable computers, and, especially, large-area televisions-on-the-wall,” which are products in which the display comprises a relatively significant portion of the overall weight of the product. Consequently, there is no suggestion or teaching in the FOLED document that its display provides significant weight reduction in products where the display comprises a relatively minor portion of the overall weight of the product, as in a gaming machine. Certainly, the FOLED document fails to specifically suggest use in gaming machines.

Instead, one of ordinary skill in the art would know that any weight reduction afforded by the substitution of a FOLED display would be trivial in comparison to the overall weight of a gaming machine, and therefore would not provide motivation to combine the FOLED document with Griswold et al. and Acres et al. The Examiner argues that the teachings of the Griswold and Acres references could be used in a tabletop machine, and that “weight reduction would be an issue as such machines typically must be carried and set up by the owner and thus reducing any weight would be beneficial.” The Examiner further argues that however minimal such weight reduction would be:

...it is still a consideration that can intrinsically motivate a designer who is specializing in tabletop machines. It may not be the primary consideration, but that does not negate it from being a consideration at all. The Examiner maintains that a

skilled artisan would consider weight of a machine, albeit not in the magnitude of other considerations, and still be motivated by reducing it when applying design.

The Examiner's arguments improperly rely on assumptions that comments in the FOLED document regarding displays in mass-produced consumer goods can be extrapolated to the completely assembled good and further to the gaming machine field.

First, the FOLED document discusses weight reduction in the context of the display itself, rather than the overall, fully assembled product. More specifically, it states that the weight of the flat panel displays used in certain products is reduced. It does not state that the overall weight of the product is reduced. It is possible that the display disclosed in the FOLED document may require controllers or other peripherals that add weight to the overall device. It is also possible that the overall weight of the products is decreased. Whatever the case, a fair reading of the FOLED document does not specifically and particularly suggest that the overall weight of a product will be reduced by using the FOLED display. The Examiner's gloss is simply not supported by the plain meaning of the language in the FOLED document, and therefore does not provide a valid motivation to combine references.

Second, there is no teaching or suggestion in the FOLED document that the FOLED display would provide weight reduction when used on a gaming machine reel. The specific applications noted in the FOLED document discuss weight reduction in the context of cell phones, portable computers, and especially large-area televisions, where the display comprises a relatively significant portion of the overall product weight. The FOLED document does not suggest that similar weight reduction is enjoyed in other products where the display comprises a relatively small portion of the overall product weight, such as in gaming machines. Again, the Examiner's position is not based on a fair reading of the FOLED document.

Still further, and ignoring whether or not the use of the FOLED display would reduce the overall weight of a gaming machine, the Examiner fails to persuasively establish that one of skill in the art concerned with the overall weight of the gaming machine would be motivated by the alleged weight reduction of FOLED displays. Displays provided on the reels of even a tabletop gaming machine are not a significant weight component of the overall structure. Accordingly, any such reduction in the overall weight of the machine attributable

to the use of a FOLED display would be marginal, and certainly not detectable as the gaming machines are “carried and set up by the owner.”

Contrary to the Examiner’s contention otherwise, the magnitude of the alleged weight reduction does factor into whether one skilled in the art would be motivated to modify or combine references. The skilled artisan is also reasonable, and it is less likely for him or her to be motivated by a negligible weight reduction, particularly where the supposed benefits of weight reduction are outweighed by other factors. It is overly simplistic to suggest that one skilled in the art blindly strives for weight reduction, no matter how negligible, to the possible detriment of other design considerations. Accordingly, the relative weight of the displays provided on slot machines reels is not a valid consideration in the design of modern gaming machines, and therefore the weight reduction, if any, described in the FOLED document is so minimal in comparison to the overall weight of the machine that it would not motivate those of ordinary skill in the gaming machine art to combine it with Griswold et al. and Acres et al.

- c. “Cost-Effective Processing” does not provide proper motivation for the proposed combination of references.

The FOLED document fails to affirmatively suggest that its display provides any cost savings to the end user. Instead, it simply states that FOLEDs “are projected to have full-production level cost advantage over most flat panel displays.” Furthermore, FOLED states that “While continuous web FOLED processing requires further development, this process may provide the basis for very low-cost, mass production.” Consequently, FOLED makes no claim that its product currently provides any cost advantages to the producer, let alone the end user. Instead, the FOLED document proposes a mere possibility that such cost advantages may be possible in the future. A merely speculative assertion of cost savings such as that made by FOLED does not provide sufficient motivation to one of ordinary skill in the art to support the proposed combination of FOLED with Griswold and Acres.

With blatant disregard to what is actually stated in the FOLED document, the Examiner blithely equates the hint of a possible cost savings during production as money in the casino owner’s pocket. In support of this basis of “motivation,” the Examiner opines that:

...it is known in casino management that cost is important to a casino because the lower the overhead, the higher the profits. Thus sufficient motivation would be provided to use FOLED as opposed to most flat panel displays in order to reduce cost as disclosed by FOLED....The casino industry is such [sic] highly competitive and the games have a short shelf life. Thus future design and consideration is a huge part of design and would most definitely [sic] motivate a skilled artisan, as the gaming industry looks further into the future to develop successful machines. (emphasis added)

To be sure, and at the risk of being redundant, the FOLED document does not state that it provides actual cost reduction to a producer, manufacturer, or end user. At best, the FOLED document suggests potential, prospective cost savings during processing, which may or may not inure to the benefit of the manufacturer or end user.

In addition, it is simply contrary to logic and experience to suggest that one skilled in the art is motivated by promises of merely potential, rather than actual, cost savings. Rather, the gaming machine artisan, as well as one skilled in any art, would be motivated by actual, real cost savings, not the mere promise of cost savings. To suggest otherwise is simply wrong.

3. Conclusion with respect to claims 28, 31, 32, 34, 36-38, and 40.

For each of the reasons presented above, it is respectfully submitted that no proper motivation exists to combine the FOLED document with Griswold et al. and Acres et al. as suggested by the Examiner, and therefore the obviousness rejection as asserted against claims 28, 31, 32, 34, 36-38, and 40 must be withdrawn.

C. The Office action fails to state a *prima facie* case of obviousness against claims 29, 30, 35, and 39.

Claims 29, 30, 35, and 39 were rejected under 35 U.S.C. §103(a) as obvious over Griswold et al. (U.S. Patent No. 6,027,115) in view of Acres et al. (U.S. Patent No. 6,008,784) in view of the FOLED document and further in view of the "Business Week 2000: The Tube" article (hereinafter "the Tube article"). Claims 29 and 30 depend from claim 27, claim 35 depends from claim 33, and claim 39 depends from claim 37, and therefore each of the rejected claims includes the same language noted above, including the "elastically bent"

term. The following arguments distinguish these claims from the cited prior art based on language used in independent claims 27, 33, and 37.

1. The rejection of claims 29, 30, 35, and 39 fails to address each element in the claims.

As an initial observation, it is again instructive to note that the obviousness rejection of these claims fails to assert that the proposed combination discloses or suggests a flexible display that may be elastically bent as specified in the claims. While the Examiner's definition of the term "elastically" renders it virtually insignificant, Applicants have demonstrated above that those of skill in the art would understand this term differently. Accordingly, the rejection as stated fails to address each element of the claims, and therefore must be withdrawn.

2. The Examiner fails to identify proper motivation to combine the cited reference in the manner suggested in the Office action.

Notwithstanding this deficiency in the rejection as stated, Applicants submit that there is no motivation to combine the cited references as applied in the Office action. In articulating the rejection, the Examiner argues that one of skill in the art would be motivated by lower power consumption to substitute the LCD disclosed in the Tube article for the FOLED display. While the Tube article discloses a "low voltage LCD which lets a pared-down processor do most tasks," it is described in the context of a laptop computer, where battery life and power consumption are of utmost concern. Clearly, lower power consumption is of paramount importance to such portable electronic devices. At no point does the Tube article disclose or suggest, however, that such reduction in power consumption is sufficiently significant to be of any importance to one concerned with primarily stationary devices that are connected to a utility power grid, rather than a battery, let alone specifically suggesting that the reduced power consumption afforded by a flexible LCD is particularly desirable in gaming machine design.

Specifically, the Tube article fails to disclose or suggest whether the LCD described therein would be suitable for the gaming machine arena. One skilled in the art is primarily concerned with the ability of the gaming machine to attract and retain players. The primary means of doing this is to provide a flashy display, novelty, or other performance prop that draws the attention of a player. Frequently, this involves the use of bright lighting,

particularly at the focal point of game play. The LCD disclosed in the Tube article, however, is primarily concerned with laptop displays, which have much less stringent requirements regarding the brightness and intensity of light to be provided. The Tube article fails to disclose or suggest that the LCD is capable of producing light that is sufficiently bright and intense for a gaming machine while still providing the benefit of lower power consumption.

Despite the dubious nexus between the LCD of the Tube article and the gaming machine specified in the claims, the Examiner posits that power consumption “represents overhead to the casino and any reduction in said overhead would be beneficial and thus desirable.” Similar to the argument regarding “weight reduction” noted above, the Examiner again oversimplifies the plight of the skilled artisan in suggesting that he is blindly driven by “any” reduction in power consumption, presumably to the detriment of any other design considerations.

The marginal power reduction, if any, offered by the LCD of the Tube article simply does not provide one skilled in the art the motivation to combine. Instead of pursuing any amount of power conservation at all costs, one skilled in the art would take a more reasonable approach by weighing that potential benefit against any possible drawbacks. The casino environment is dominated by advertising displays, decorations, security systems, video screens, and other devices that consume significant amounts of power. The slot machine itself includes lighted buttons, lighting, motors, processors, and other components requiring power in addition to the reel display. In this context, the amount of power consumed by a reel display is so small that it would not provide a primary consideration to one concerned with reducing overall power consumption of a casino. That is not to say that such a reduction in power consumption would not be welcome, but rather that the marginal benefit it may promise is likely overshadowed by other considerations, such as the ability to attract players, and therefore does not properly serve to motivate one skilled in the art to combine references as suggested by the Examiner.


Accordingly, reduction of power consumption, in and of itself, would not motivate one of skill in the gaming machine art to combine the Tube article with the FOLED document, Acres et al., and Griswold et al. as proposed in the Office action.

CONCLUSION

In view of the foregoing remarks, it is respectfully submitted that rejections asserted against claims 27-40 fail to set forth a prima facie case of obviousness, and therefore the rejections are erroneous and must be withdrawn.

Dated: November 19, 2004

Respectfully submitted,

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/964,962

27. (Original) A gaming apparatus comprising:
- a housing;
 - a value-input device that is capable of allowing a player to deposit a medium of value;
 - an input device that allows said player to make a wager;
 - a gaming apparatus reel rotatable about an axis and having an outer circumferential region;
 - a motor capable of rotating said gaming apparatus reel;
 - a flexible display mounted on said outer circumferential region of said gaming apparatus reel, said flexible display having a flexibility that allows said flexible display to be elastically bent from a substantially straight configuration to a curved configuration, wherein said curved configuration is capable of contacting said outer circumferential region of said gaming apparatus reel at two points that define endpoints of an arc of said circumferential region having a central angle of about ninety degrees, and wherein said flexible display is adapted to display an indicium to said player of said gaming apparatus;
 - a display driver for controlling said flexible display;
 - a slip ring drum rotatable about said axis of said gaming apparatus reel, wherein said slip ring drum includes a plurality of electrical conductors;
 - a plurality of electrically conductive brushes operatively coupled to said slip ring drum;
 - a controller operatively coupled to said value-input device, said input device, said motor, and said electrically conductive brushes, said controller comprising a processor and a memory operatively coupled to said processor;
 - said controller being programmed to detect a deposit of a medium of value by said player;
 - said controller being programmed to detect a wager by said player;
 - said controller being programmed to cause said indicium to be displayed on said flexible display;

said controller being programmed to cause said motor to spin said gaming apparatus reel;

said controller being programmed to cause said motor to stop said gaming apparatus reel;

said controller being programmed to determine a value associated with an outcome of a gaming apparatus game; and
a payout tray to tender value to said player.

28. (Original) The gaming apparatus of claim 27 wherein said controller is further programmed to dynamically change said indicium displayed on said flexible display.

29. (Original) The gaming apparatus of claim 27 wherein said flexible display comprises a flexible liquid crystal display.

30. (Original) The gaming apparatus of claim 29 wherein said controller is further programmed to dynamically change said indicium displayed on said flexible liquid crystal display.

31. (Original) The gaming apparatus of claim 27 wherein said flexible display comprises a flexible light emitting diode display.

32. (Original) The gaming apparatus of claim 31 wherein said controller is further programmed to dynamically change said indicium displayed on said flexible light emitting diode display.

33. (Original) A slot machine comprising:
a housing;
a value-input device adapted to allow a player to deposit a medium of value;
an input device that allows said player to make a wager;
a slot machine reel rotatable about an axis and having an outer circumferential region;

a flexible display mounted on said outer circumferential region of said slot machine reel, said flexible display having a flexibility that allows said flexible display to be elastically bent between a substantially straight configuration and a curved configuration, wherein said curved configuration is capable of contacting said outer circumferential region of said slot machine reel at two points that define endpoints of an arc of said circumferential region having a central angle of at least ninety degrees, and wherein said flexible display is adapted to display at least one indicium representing a slot machine game to said player of said slot machine;

a display driver for controlling said flexible display; and

a controller operatively coupled to said value-input device, said input device, and said display driver, said controller comprising a processor and a memory operatively coupled to said processor,

said controller being programmed to cause said indicium to be displayed on said flexible display, and

said controller being programmed to determine a value associated with an outcome of said slot machine game.

34. (Original) The slot machine of claim 33 wherein said controller is further programmed to dynamically change said indicium displayed on said flexible display.

35. (Original) The slot machine of claim 34 wherein said flexible display comprises a flexible liquid crystal display.

36. (Original) The slot machine of claim 34 wherein said flexible display comprises a flexible light emitting diode display.

37. (Original) A gaming apparatus comprising:
- a reel rotatable about an axis and having an outer circumferential region;
 - a flexible display mounted on said outer circumferential region of said reel, said flexible display having a flexibility that allows said flexible display to be elastically bent between a substantially straight configuration and a curved configuration, wherein said curved configuration is capable of contacting said outer circumferential region of said reel at two points that define endpoints of an arc of said circumferential region having a central angle of at least ninety degrees, and wherein said flexible display is adapted to display an indicium associated with a slots game to said player of said gaming apparatus; and
 - a controller operatively coupled to said flexible display, said controller comprising a processor and a memory operatively coupled to said processor;
 - said controller being programmed to store said indicium, and
 - said controller being programmed to cause said indicium to be displayed on said flexible display.
38. (Original) The gaming apparatus of claim 37 wherein said controller is further programmed to dynamically change said indicium displayed on said flexible display.
39. (Original) The gaming apparatus of claim 38 wherein said flexible display comprises a flexible liquid crystal display.
40. (Original) The gaming apparatus of claim 38 wherein said flexible display comprises a flexible light emitting diode display.

APPENDIX B

Evidence is attached hereto as Appendix B, which takes the form of a copy of page 718 of the *Academic Press Dictionary of Science and Technology*, © 1992 by Academic Press, Inc.

Elapidae *Vertebrate Zoology*. a family of poisonous snakes of the suborder Serpentes, having permanently erect fangs in the front of the upper jaw and found in the warmer parts of both hemispheres; includes the cobras and mambas, the coral snakes of the New World, and the majority of Australian snakes.

elapsed time *Computer Technology*. the total amount of apparent time taken by a process, measured between the apparent beginning and end of the process; it does not necessarily correspond to the actual time taken by the process itself.

Elara *Astronomy*. the seventh moon of Jupiter, discovered in 1905 and measuring 76 km in diameter.

Elasipodida *Invertebrate Zoology*. an order of deep-sea sea cucumbers in the class Holothuroidea.

Elasmidae *Invertebrate Zoology*. a family of small wasps in the hymenopteran superfamily Chalcidoidea.

elasmobranch *Vertebrate Zoology*. a cartilaginous fish of the subclass Elasmobranchii, a shark or ray.

Elasmobranchii *Vertebrate Zoology*. a subclass of cartilaginous fishes of the class Chondrichthyes, including the sharks and rays and characterized by an upper jaw not fused to the cranium, amphistyoic or hyostylic jaw suspension, numerous teeth, and a covering of placoid scales.

Elassomatidae *Vertebrate Zoology*. the pigmy sunfishes, a subfamily of freshwater North American fish of the family Centrarchidae in the order Perciformes.

elastance *Electricity*. an electrical quantity that is equal to the reciprocal of the capacitance of a capacitor. *Medicine*. the degree to which an air- or fluid-filled organ, such as the lung or bladder, can return to its original size when a distending or compressing force is removed.

elastase *Enzymology*. a proteolytic enzyme secreted by the pancreas that digests elastin and renders it soluble.

elastic *Mechanics*. having the property of elasticity; able to return to its original shape after experiencing strain and removal of deforming stress.

elastica *Mechanics*. a plane curve made by a thin rod when forces and couples are applied only at its ends.

elastic aftereffect *Mechanics*. the lag that some materials show in recovering from elastic deformation.

elastic axis *Mechanics*. a line lengthwise through a beam; transverse surface forces must be directed toward this line in order not to produce torsion.

elastic bitumen see ELATERITE.

elastic body *Mechanics*. a solid body possessing elasticity.

elastic buckling *Mechanics*. the buckling of a member or structure under a compressive load within its elastic range.

elastic cartilage *Histology*. a type of cartilage containing an abundance of extracellular elastic fibers.

elastic center *Mechanics*. the midpoint in the cross section of a beam between the shear center and the center of twist (the three are often at the same point).

elastic collision *Mechanics*. a collision between ideally elastic bodies, such that the final kinetic energy is the same as the initial kinetic energy.

elastic constant see COMPLIANCE CONSTANT.

elastic cross section *Physics*. an area which measures the probability that an elastic collision will occur between two particles.

elastic curve *Mechanics*. the shape of the neutral surface in a beam deflected by a load.

elastic deformation *Materials Science*. a temporary deformation in a solid material that has been subjected to a load, wherein the material returns to its original shape after the load is removed.

elastic design *Building Engineering*. a former construction design in which a structure is configured to allow working stresses between 0.5 and 0.66 of the elastic limit in the framing material used.

elastic energy see STRAIN ENERGY.

elastic failure *Mechanics*. the deformation of a solid body in excess of its elastic limit, resulting in permanent deformation or fracture.

elastic fiber *Histology*. a yellow extracellular fiber that imparts elasticity to connective tissues.

elastic flow *Mechanics*. the elastic deformation of a material, or recovery from such deformation.

elastic force *Mechanics*. the resisting internal force resulting from the elastic deformation of an object, which restores the original shape when the external force is removed.

elastic hysteresis *Mechanics*. the dependence upon strain history of the relationship between stress and strain in a nearly elastic solid. Also, MECHANICAL HYSTERESIS.

elasticity *Materials Science*. a property of material bodies under stress, indicating the degree to which strain disappears when the stress has been removed. *Mathematics*. the study of the behavior of elastic bodies, especially using the differential equations.

elasticity number 1 *Fluid Mechanics*. in viscoelastic fluids, a dimensionless parameter indicating the ratio of elastic force to viscous force.

elastic limit *Mechanics*. the critical stress or strain at which a body will yield to enduring deformation. Also, YIELD POINT.

elastic modulus *Materials Science*. the ratio between the stress on a material and the resulting elastic strain. The modulus of elasticity is Young's modulus, which is used in a simple tensile test and is the ratio of the applied load to the length change/unit length. Also, MODULUS OF ELASTICITY.

elasticotaxis *Microbiology*. the phenomenon whereby lines of gliding bacteria become oriented parallel to lines of stress induced in a solid medium.

elastic potential energy *Mechanics*. the energy made available by the return of an elastic body to its original configuration.

elastic proportionality *Materials Science*. see ELASTICITY.

elastic ratio *Mechanics*. for the component of a specific elastic limit divided by the ultimate strength of a material.

elastic rebound theory *Geology*. a theory that explains the abrupt release of a progressively increasing elastic strain in masses on either side of a fault. Also, REID MECHANISM.

elastic recovery *Mechanics*. the portion of deformation that occurs after the causative force is removed.

elastic scattering *Materials Science*. a process in which particles slide and disperse without losing energy.

elastic strain *Materials Science*. a reversible dimensionless strain; that is, when the stress is removed, the strain disappears.

elastic strain energy *Mechanics*. the work required to deform a body.

elastic theory *Mechanics*. the theory of the elastic relation between loads, stresses, deformations, and strains. Also, THEORY OF ELASTICITY.

elastic tissue *Histology*. a fibrous connective tissue containing an abundance of elastic fibers.

elastic vibration *Mechanics*. the oscillatory motion in an elastic body.

elastic wave *Physics*. a mechanical wave that moves through a progressive oscillation of matter about fixed equilibrium positions.

elastin *Biochemistry*. a protein, present in artery walls, which is crosslinked with desmosine and residues of lysine. *Materials Science*. a protein constituting the major component of elastic fibers.

elastodynamics *Mechanics*. the field of dynamics that deals with the propagation and properties of elastic waves.

elastoid *Medicine*. a substance formed in the vessels of the body as a result of the hyaline degeneration of blood vessels.

elastomer *Materials*. any of numerous natural or synthetic materials having elastic properties similar to rubber.

elastomeric fiber *Textiles*. a nontextured yarn or fabric of polymer filaments that can be stretched repeatedly up to twice its length and still snap back when released.

elastoplastic *Materials Science*. an elastomer that contains crosslinks, unlike most elastomers; it softens when heated for molding, and becomes solid yet maintains its elastic behavior upon cooling. Elastoplastics are derived from polyolefins, polyurethanes, polybutadiene, and styrene copolymers, and are widely used in making machine housings, automobile accessories, sporting equipment, adhesives, and toys. Also, THERMOPLASTIC RUBBER.

elastoplasticity *Mechanics*. the state exhibited by a material that is deformed both elastically and plastically.

elastoresistance *Electricity*. a variation in the electrical resistance of a material while it is subjected to a stress within its elastic limit.

elastosis *Medicine*. 1. the degeneration of elastic tissue. 2. a progressive degenerative changes in dermal connective tissue with increasing amounts of elastic material.

elater *Botany*. 1. an elongated, filamentous, hygroscopic structure in sporangia of liverwort sporophytes that triggers dehiscence and dispersal. 2. one of the four club-shaped, hygroscopic bands that surround spores in horsetail (*Equisetum*). 3. a filament in the capsula of slime molds. *Invertebrate Zoology*. a click beetle belonging to the family Elateridae. *Entomology*. the furcula or abdominal spring organ in the wingless springtails in the order Collembola.

Elateridae *Invertebrate Zoology*. a large family of coleopteran insects, the click beetles, in the superfamily Elateroidea.